

REMARKS

Claims 1-10 and 20-23 are in the application, with Claims 11-19 having been cancelled and with Claims 1, 2, 4, 9, 20 and 22 having been amended. Claims 1, 4 and 20 are the independent claims herein. No new matter has been added. Reconsideration and further examination are respectfully requested.

Claim Rejections

Claims 1-10 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 5,892,279 ("Nguyen"); and Claims 20-23 were rejected under 35 U.S.C. §103(a) over U.S. Publication No. 2002/0196650 ("Chang") in view of Nguyen. Reconsideration and withdrawal are respectfully requested.

Amended independent Claims 1, 4 and 20 each include, among other features, a portion of solder material primarily pressure-clad to a first side of a thermal conductor, wherein a substantially voidless interface exists between the portion of solder material and the first side of the thermal conductor. As described at least on page 3, lines 12-15 of the present specification, some embodiments of the foregoing features may provide increased strength, increased heat transfer and/or increased resistance to cracks at an interface between the portion of solder material and the first side of the thermal conductor.

The art of record is not seen to disclose or to suggest the foregoing features. Specifically, the art of record is not seen to disclose or to suggest a portion of solder material primarily pressure-clad to a first side of a thermal conductor, wherein a substantially voidless interface exists between the portion of solder material and the first side of the thermal conductor.

Column 5, lines 1-16 of Nguyen describe a packaging system including a semiconductor chip (IGBT) that is "soldered directly" to a direct bonded copper beryllium oxide (DBC BeO) substrate. The substrate is in turn "soldered directly on the surface of a heat sink (HS)." Nguyen can therefore only be seen to describe placing solder between two elements, melting and cooling the solder to join the two elements in the traditional manner. Nowhere can Nguyen be seen to disclose or to suggest a portion of solder material primarily pressure-clad to a first side of a

thermal conductor, nor a substantially voidless interface existing between a portion of solder material and a first side of a thermal conductor.

Chang is not seen to remedy the deficiencies in Nguyen. Chang was cited for its disclosure of an IC die and a memory. Chang was not cited as disclosing and is not seen to disclose either a portion of solder material primarily pressure-clad to a first side of a thermal conductor, or a substantially voidless interface existing between a portion of solder material and a first side of a thermal conductor.

Amended independent Claims 1, 4 and 20 are therefore believed to be in condition for allowance. The remaining dependent claims are also believed to be allowable for at least the foregoing reasons.


CONCLUSION

The outstanding Office Action presents a number of characterizations regarding each of the applied references, some of which are not directly addressed herein because they are not related to the rejections of the independent claims. Applicant does not necessarily agree with the characterizations and reserve the right to further discuss those characterizations.

For at least the reasons given above, it is submitted that the entire application is in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience. Alternatively, if there remains any question regarding the present application or any of the cited references, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is cordially requested to contact the undersigned via telephone at (203) 972-0049.

Respectfully submitted,

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Date


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